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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/17/2003

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EXAMINER

IP, SIKYIN

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 10/17/2003

23

Please find below and/or attached an Office communication concerning this application or proceeding.



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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

ART UNIT	PAPER NUMBER
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23

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 03/31/03; 7/3/03 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), — days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-3, 5-14, 16-25, 27-31, 34-57 are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 1-3, 5-7, 9-14, 16-21, 23-25, 27-31, 34-57 are rejected.

5. ☒ Claims 8, 22 are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: In page 6 of the instant specification that, the brief description of the drawing for Figures 1-7 are not being complied with the 37 C.F.R. §1.74. If a figure contains several parts, for example, figure 1A, 1B, and 1C, the figure may be described as figure 1. If only figure 1A is described in the brief description, then applicant is require to either add a brief description of figure 1B and 1C or describe the figure as "figure 1." See MPEP § 608.01 (f) and 608.02. Appropriate correction is required.

Terminal Disclaimer

2. The terminal disclaimer filed on March 31, 2003 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of USP 6,471,913 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Objections

3. Claim 38 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper

dependent form, or rewrite the claim(s) in independent form.

4. Claim 38 is objected because it depends on canceled claim 33.

Claim Rejections - 35 USC § 103

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-3, 5-7, 9-14, 23-25, 27-31, 34-43, and 45-57 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 6072163 to Armstrong et al (PTO-1449).

8. Armstrong disclose(s) the features including the claimed microelectronic workpiece baking and chilling housing (10) which includes top cover (18), bottom housing member (16), workpiece (12), supports (19, 56, 32), bakeplate (20), and heat sinks (38, 26) (See Figures 1a-1c; col. 8, line 20 to col. 13, line 36). When the

workpiece is lower to the bakeplate (20), the workpiece (12) is supported by numbers of protuberances in order to reduce the direct contact area (col. 12, lines 37-55). The bakeplate optionally contains flow channels (38) for fluid communication gap (62) between bakeplate (20) and workpiece (12). The flow channels (38) could be used for vacuum as workpiece holder or used as heat sink when cooling gas helps to reduce overheat of the workpiece (12) (col. 8, lines 45-56 and col. 13, lines 19-36). The bakeplate may contain at least two independent heating zones (col. 12, lines 6-36). The bakeplate (20) could heat to temperature, for example, 130 °C and higher (col. 2, lines 52) which is higher than eutectic solders melting temperatures such as known eutectic solders 48Sn-52In, 50Sn-50In, and 67Bi-33In with eutectic melting temperatures 118°C, 118-125°C, and 109°C respectively. The bakeplate is connected to electrical connector (36). The polyamide resins is laminated to bakeplate (20, 70) (col. 17, lines 38-53). The polyamide materials could have conformability characteristics (col. 17, lines 47-50) which reads on compressible/uncompressible materials. The bakeplate (20) and heat sink/cooling member (26) are reciprocally movable relative to each other (col. 10, lines 22-31). The cooling member (26) contains ports (28) for cooling fluids. The thermal capacity of heat sink (26) to bakeplate is at least 10:1 (col. 9, lines 1-29). Overlapping elements have been held to be a prima facie case of obviousness. See MPEP § 2112.01, In re Best, 195 USPQ 430,

In re Malagari, 182 USPQ 549, In re Titanium Metals Corporation of America v. Banner, 227 USPQ 773 (Fed. Cir. 1985), In re Woodruff, 16 USPQ 2d 1934, and In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

9. With respect to claims 44 and 49, Armstrong does not disclose the specific area ratios as claimed. But, Armstrong does disclose two zones heating and embed the resisting heating elements in the bakeplate/substrate which are inherently have area ratios. Therefore, selecting a range in a known range by optimization for the best results is within ambit of ordinary skill artisan, see In re Aller, et al., 105 USPQ 233 and *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

10.

11. Claims 16-21 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 4979464 to Kunze-Concewitz.

12. Kunze-Concewitz disclose(s) the features including the a wafer heat treating housing (111) which contains gas inlet (136), gas outlet (137), heat treatment stations (147), heat treatment stations (147) in stackable magazine case (42) (reads on claimed modular and interchangeable chamber), and hot and/or cooling plates (166) (see col. 4, line 30 to col. 6, line 26 and col. 7, lines 19-65). The claimed apparatus members are disclosed by cited reference. Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time

the invention was made to have selected the overlapping portion of the subject matter disclosed by the reference. Furthermore, overlapping ranges have been held to be a prima facie case of obviousness. See MPEP §2144.05 (I); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

Allowable Subject Matter

13. Claims 8 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: the references of record do not teach, disclose, or suggest the claimed limitation as set forth in claims 8 and 22.

Response to Arguments

15. Applicant's arguments filed March 31, 2003 have been fully considered but they are not persuasive.

16. Applicants' argument as set forth in paragraph bridging pages 15-16 of the instant remarks is noted. But, applicants are required to amend the "Figures 1A-1G" as "Figure 1", for example, in the instant Brief Description of the Drawings to be consistent with the MPEP § 608.01 (f). Furthermore, Figures 4A-7B cannot be considered as one figure because they have different figure numbers.

17. Applicants' argument as set forth in paragraph bridging pages 18-19 of the instant remarks is noted. But, Armstrong in Figures 1a-c disclose flow channels (38) in the bakeplate (20) could be used for vacuum (col. 8, lines 45-56). The bakeplate (20) has solid contacts with workpiece at protuberances (56).

18. Applicants' argument in page 20, item c of the instant remarks is noted. But, cooling member (26) is one heat sink. The other heat sink is flow channels (38) when cooling gas such as He is flowed through the flow channels(38) among the heating zones into the gap (62) (See col. 13, lines 19-36).

19. Applicants' argument as set forth in paragraph bridging pages 21-22 of the instant remarks is noted. But, the claimed common portion between two chambers reads on the partitions (43) in the magazine cases (42) (col. 5, lines 33-64). The claimed common portion between two chambers does not function differently than the partitions (43).

20. Applicants' argument as set forth in page 23, item (c) of the instant remarks is noted. But, Armstrong laminates the bakeplate (20, 70) with polyamide resins (col. 17, lines 38-53). The polyamide materials could have conformability characteristics (col. 17, lines 47-50) which reads on the claimed compressible/uncompressible materials.

21. Applicants' argument as set forth in page 24, item (c) is noted. But, Armstrong discloses the resistant heater is energized by an electrical connector (36) in bakeplate (20) which has heating zones structure as set forth in col. 12, lines 6-23.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented

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in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (703) 308-2542. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (703)-308-1146.

The facsimile phone number for this Art Unit 1742 are (703) 305-3601 (Official Paper only) and (703) 305-7719 (Unofficial Paper only). When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.



SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip
September 21, 2003